

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 147

[FRL- - ]

Osage Mineral Reserve Underground Injection Control Program

AGENCY: Environmental Protection Agency

ACTION: Proposed Rule

SUMMARY: The Environmental Protection Agency (EPA) is proposing amendments to its Underground Injection Control (UIC) program regulations for the Osage Mineral Reserve in Oklahoma (40 CFR Part 147, Subpart GGG) to allow the Director flexibility to waive mechanical integrity requirements for temporary abandoned wells and to designate a portion of the Happy Hollow and Z-Sand aquifers in western Osage County, Oklahoma as exempted aquifers. The proposed changes will provide the Director with the same flexibility that presently exists in the generic Federal UIC regulations (see 40 CFR §§ 144.28(c)(2)(iv) and 144.52(a)(6)) to waive certain technical requirements applicable to active injection wells upon a demonstration by the owner or operator that the well will not endanger underground sources of drinking water (USDWs) during the period of temporary abandonment. The aquifer exemptions would be limited to injection of water of a quality equal to or better than that contained in the proposed exempted aquifer. [The proposed aquifer exemptions are being sought to allow the operators to maintain fluid levels below the base of the lowermost USDW.]

DATE: EPA will accept public comment on the proposed rule until (insert date 45 days from the date of publication in the

Federal Register); a public hearing will be held on \_\_\_\_\_,  
at \_\_\_\_\_; requests to present oral testimony must  
be received on or before \_\_\_\_\_. EPA  
reserves the right to forego the hearing if sufficient public  
interest is not expressed.

ADDRESSES: Comments, requests to testify, and inquiries  
concerning the Public Docket should be addressed to Comment  
Clerk, Underground Injection Control Branch, State Programs  
Division, Office of Drinking Water (WH-550E), 401 M Street, SW.,  
Washington, DC 20460. The docket for today's proposal will be  
available for public inspection and copying in 1140 East Tower at  
EPA Headquarters and EPA's Region VI Office, Room \_\_\_\_\_, 1445  
Ross Avenue, Dallas, TX 75202.

The hearing will be held at the following location:

FOR FURTHER INFORMATION CONTACT: Donald M. Olson, Underground  
Injection Control Branch, State Programs Division, Office of  
Drinking Water (WH-550E), EPA, 401 M Street, SW, Washington DC,  
20460, Telephone: (202) 382-5530.

SUPPLEMENT INFORMATION:

I. Background

The Safe Drinking Water Act (SDWA) authorizes EPA to  
regulate underground injection activity on all lands in the  
United States, including Indian lands. (EPA has adopted the  
definition of "Indian country" found at 18 U.S.C. 1151, as the  
definition of "Indian lands" for the Direct Implementation UIC  
program. It is set forth in full at 40 CFR § 144.3). The 1986

Amendments to the SDWA specifically directed EPA to promulgate by March 1987 a federal UIC program for all Indian lands not already covered by an applicable UIC program.

In September 1983, (48 FR 40100 et seq.) EPA proposed four alternative approaches to promulgating UIC programs on Indian lands in States with approved State-administered programs: (1) Implement a program consisting of current UIC minimum requirements; (2) implement a program consisting of requirements patterned after State requirements from the approved program applicable to the rest of the State; (3) adopt a combination of the minimum UIC requirements and the approved State program requirements; or (4) develop unique requirements in response to Indian concerns or other special circumstances. After reviewing comments, EPA published its intent to use any of the four proposed options appropriate to the individual case when implementing programs for Indian lands in primacy States (49 FR 20140, May 11, 1984 et seq.).

On November 15, 1984 (49 FR 45292 et seq.), EPA promulgated a UIC program for Class II wells on the Osage Mineral Reserve in Oklahoma. The Osage program was designed according to a combination of Options (3) and (4), and consisted of requirements drawn from the UIC minimum requirements regulations, the Oklahoma Corporation Commission regulations, the Bureau of Indian Affairs regulations, and unique requirements developed to Indian concerns. A program to regulate Class I, III, IV, and V wells for the Osage Mineral reserve and other Indian lands in Oklahoma was developed separately and promulgated on October 25, 1988 (53

FR 43096 et seq.).

## II. Existing Osage Mineral Reserve Program

The UIC program for Class II wells on the Osage Mineral Reserve consists of the basic program elements contained in the Federal UIC minimum requirements: general program requirements, program requirements and technical standards for wells authorized by rule, program requirements and technical standards for wells authorized by permit, and procedural requirements (including public participation) for the permitting process. Although the format or means of administration of these standards varies from the minimum requirements, the substantive standards themselves are equivalent to the minimum requirements with only few and limited exceptions.

Some variations result from the attempts to maintain consistency with the program of the Oklahoma Corporation Commission applicable in the rest of the State. Although that program has been approved by EPA, it does not in every case meet precisely the UIC minimum requirements regulations, because strict equivalence is not required of State Class II programs under Section 1425 of the SDWA. Other variations result from conforming the Osage program to the existing BIA program, or to tribal preferences. Section 144.2 of EPA's regulations provides the flexibility to promulgate programs on Indian<sup>n</sup> lands that contain such variations. The major differences, and the rationale for the differences and the proposed modifications to those provisions, are outlined below.

### A. Plugging and ~~ab~~<sup>a</sup>andonment (Minimum Requirements §§ 144(c) and

144.52(a)(6); Osage § 147.2905)

EPA's (minimum requirements) regulations require <sup>as a minimum</sup> that wells be plugged when they are abandoned (§ 146.10), but provide that temporary and intermittent cessation shall not be considered abandonment [§§ 144.28(c)(1) and 144.52(a)(6)]. For EPA administered programs generally, EPA has provided that any cessation of injection that extends longer than two years will not be considered "temporary and intermittent," and that, therefore, the well must be plugged unless the owner or operator notifies the Regional Administrator and demonstrates maintenance procedures that will ensure no endangerment of USDWs during the period of abandonment. To achieve consistency with the Oklahoma Corporation Commission's (OCC) requirements that apply elsewhere in Oklahoma, EPA had proposed a six month plugging and abandonment period in Osage County (49 FR 20183, May 11, 1984.). However, after receiving and considering comments for and against the six month plugging and abandonment requirements, EPA decided that a well be properly plugged and abandoned within one year of ceasing injection unless the owner or operator demonstrates that the well will be reactivated (49 FR 20238 et seq.) OCC subsequently modified its plugging and abandonment requirements to one year and EPA's requirement is presently consistent with the State's.

#### B. Exempted Aquifers

In the minimum requirements, EPA defines underground sources of drinking water (USDW) quite broadly, but allows exemptions of certain aquifers from treatment as USDWs if they meet certain



~~certain aquifers from treatment as USDWs if they meet certain~~  
criteria in §146.4 that indicate their unsuitability for use as  
drinking water. The exemption of an aquifer may allow owners or  
operators of a class or classes of wells to inject into what  
would otherwise be afforded protection as a USDW. Section 144.7<sup>147.2908</sup>  
allows the Director to exempt aquifers if they do not serve as a  
source of drinking water, and will not in the future serve as a  
USDW because they are:

- (1) Mineral, hydrocarbon, or geothermal energy producing;  
or are expected to contain the above in producible  
quantities;
- (2) Situated at a depth or location that would make  
recovery of water for drinking water economically or  
technically impractical;
- (3) So contaminated that it would be economically or  
technologically impractical to render them fit for  
human consumption; or
- (4) Located over a Class III mining area subject to  
subsidence or catastrophic collapse.

In addition, aquifers or their portions that contain between  
3,000 or 10,000 mg/l TDS and that do not now serve as a source of  
drinking water may be exempted if they are not reasonably  
expected to serve as a supply to a public water system.

EPS<sup>A</sup> classifies aquifer exemptions as either "major" or  
"minor." Major exemptions are defined as any exemption of an  
aquifer containing less than 3,000 mg/l total dissolved solids  
that is (a) related to any Class I or IV well; or (b) not related

to a single permitting action or a single existing enhanced recovery well or project authorized by rule.

All exemptions not defined as major are considered to be minor. Minor exemptions therefore include all exemptions considered as part of a single permitting action. When considered as part of a single permitting action, the permitting process will provide public notice, and opportunity for comment and for a hearing. The exemption will be limited to a defined area around the well or facility, and the effect of the exemption will be limited to the activities authorized under the permit. For a single enhanced recovery well or project, EPA will conduct the aquifer exemption process according to the ~~same~~ public participation procedures as provided for permitting actions. Also considered <sup>as</sup> minor exemptions will be those approved because the aquifer contains more than 3,000 mg/l total dissolved solids and "is not reasonable expected to supply a public water system" see §146.4(c). This is consistent with the procedures for EPA approval of these exemptions under approved State-administered programs, for which §144.7 places a 45-day time limit on EPA approval/disapproval of the exemption.

### III. Proposed Revisions to the Osage Mineral Reserve Program

#### A. Plugging and Abandonment Requirements

EPA is proposing to change the plugging and abandonment requirements of Section 147.290<sup>5</sup>(a) to allow a two year period of temporary abandonment. The previous period was one year. In addition, the owner/operator may seek to extend the period of temporary abandonment by (i) providing notice to the Regional

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Administrator and (ii) describing actions or procedures satisfactory to the Regional Administrator that the owner/operator will take to ensure that the well will not endanger USDW's during the period of temporary abandonment. *- good*

These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator. This change will conform the Osage program to the generic requirements of 144.28. The <sup>more than</sup> program has been in operation for <sup>A</sup> five years, and experience indicates a need for more flexibility in the plugging and abandonment requirements. ~~In times of relative price stability,~~ the costs oil and gas of production versus income can determine the economic life of a field and individual wells. With the downturn in oil prices, many fields and wells are not in production. However, the Osage Tribe and the owner/operators wish to preserve the wells for the day when increased oil prices will support renewed production. The Safe Drinking Water Act instructs EPA to avoid any regulation which unnecessarily impedes the production of oil and gas, as long as USDW's are not endangered.

The concern with abandoned injection wells is that they may allow fluids to move from the injection zones into USDW's or allow fluids in one formation to migrate into another formation. This can happen if mechanical integrity is lost. Proper plugging and abandonment requires setting concrete plugs in the well bore to block any such migration. The concern with a temporarily abandoned well is that over time the casing will corrode and/or



be damaged so as to allow fluid migration.

At the <sup>When</sup> time EPA promulgated the Osage program, <sup>the</sup> EPA believed that the discretion provided by the generic regulations was not needed in the one country Osage program. In addition, there was a concern to ensure consistency with the State program approved by Oklahoma, and yet not disrupt the program of the BIA <sup>Issue of Indian Affairs</sup> or ignore the preferences of the Osage Tribe. As was stated in the preamble to the Osage regulations (FR VOL 49, No. 93 May 11, 1984), "The main reason for the six month requirement is that this is the standard required by the OCC regulations that apply elsewhere in Oklahoma." Subsequently, after comment, the requirement was changed to one year. The OCC in turn, changed their plugging and abandonment requirement to one year. EPA believes that the further change to allow two years before a temporarily abandoned well will be required to be plugged and abandoned and allowing the Regional Administrator flexibility to extend the period of temporary abandonment, simply brings the Osage program into conformance with the 17 jurisdictions and Indian Lands where EPA directly administers the UIC program, without reducing the level of protection afforded USDW's. It is important to note that all requirements for mechanical integrity remain in force for temporarily abandoned wells. EPA has not experienced any difficulties implementing this requirement in its other direct implementation programs. ?

#### B. Aquifer Exemptions

EPA is proposing to designate a portion of the Happy Hollow and Z-Sand aquifers in western Osage County, Oklahoma as exempted

aquifers in accordance with 40 CFR 147.2908. The aquifer exemptions would be limited to Class II injection of water of a quality equal to or better than that contained in the proposed exempted aquifers. There is currently no injection, and the operator does not intend to inject, into the proposed exempted aquifers. The proposed exemptions are being sought to allow the operator to maintain fluid levels below the base of the lowermost USDW.

The Z-Sand is a locally named sandstone of the Buck Creek Formation of the Pennsylvania series. It ranges in thickness between 40 and 60 feet. The Happy Hollow is a limestone, also in the Buck Creek Formation. It is located approximately 100 feet above the Z-Sand and ranges in thickness between 10 and 30 feet. In the area proposed to be exempted, the two units occur at depths between 500 and 800 feet below the land surface. The confining layer between the shallow USDW's and the top of the Happy Hollow and/or Z-Sand ranges between 350 feet and 500 feet and contains 125 to 150 feet of cumulative shale.

The proposed area of the exemption is sparsely populated ranching country and all drinking water is obtained from a rural water system which obtain its water supply from another aquifer outside of the exempted area. A survey was conducted and no water supply wells which tap the Happy Hollow or Z-Sand aquifers are located within the proposed area.

Based on an evaluation of electric logs and actual water analyses, the operator has satisfactorily demonstrated that the two aquifers contain ground water with total dissolved solids of

more than 3,000 mg/l and it is not reasonable to expect them to supply a public water system because of the good quality water available through the rural water system. The operator also submitted data comparing the costs of obtaining a water supply from the Happy Hollow or Z-Sand with that of the rural water system to substantiate that the aquifers are situated at a depth which makes recovery of water for drinking water purposes economically impractical.

These proposed exemptions become effective 30 days after publication of the final rule in the Federal Register. Public comment is invited, particularly if information is available to show that any of the formations proposed to be exempted are currently serving as sources of drinking water, or if there is other current injection activity into USDWs where exemptions are not proposed.

#### IV. Regulatory Impact

##### A. Executive Order 12291

Under Executive Order 12291, EPA must judge whether the proposed amendments to the regulations are major and therefore subject to the requirements of a Regulatory Impact Analysis. The proposed amendments do not impose any additional burden on the States or the regulated community. The proposed amendments do not have an annual effect on the economy of \$100 million or more, nor do they satisfy any of the other criteria listed in section 1(b) of the Executive Order. Therefore the proposed amendments do not constitute a major rulemaking. This proposal has been submitted to the Office of Management and Budget (OMB) for review

as required by Executive Order 12291.

B. Paperwork Reduction Act

EPA has determined that the Paperwork Reduction Act, 44 U.S.C. 3501 et seq., does not apply to this proposed rule since no information collection or recordkeeping would be involved. This proposed rule would merely exempt specific portions of certain aquifers for the purposes of Class II injection in the Osage Mineral Reserve and any information collection or recordkeeping requir<sup>e</sup>ments have already been approved by OMB.

C. Regulatory Flexibility Analysis

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., an agency is required to prepare an initial regulatory flexibility analysis whenever it is required to publish general notice of any proposed rule, unless the head of the agency certifies that the rule, if promulgated, will not have a significant impact on a substantial number of small entities. The proposed amendments to the regulations requires no additional reporting or other burdens on the regulated community. Therefore, the Administrator certifies that this regulation will not have a significant impact on a substantial number of small entities.

Dated: \_\_\_\_\_

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William K. Reilly

Administrator

For the reasons set out in the preamble, Part 147 of title 40 of the Code of Federal Regulations is proposed to be amended as follows:

Part 147 -- State Underground Injection Control Programs

1. The authority citation for Part 147 continues to read as follows:

Authority: 42 U.S.C. 300h; and 42 U.S.C. 9901 et seq.

2. Part 147, Subpart GGG is proposed to be amended by deleting the introductory material <sup>NO!</sup> and revising Section 147.2905(a) to read as follows:

(a) After cessation of operations of two years the owner or operator shall plug and abandon the well in accordance with the procedures and requirements of this section unless he:

- (i) Provides notice to the Regional Administrator;
- (ii) <sup>UNTI - 10/1/80</sup> Describes actions or procedures satisfactory to the Regional Administrator that the owner or operator will take to ensure that the well will not endanger USDWs during the period of temporary abandonment. These actions and procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Regional Administrator.

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3. Section 147.2908 is proposed to be amended by adding a new paragraph (c) to read as follows:

§147.2908 Aquifer Exemptions.

\* \* \* \* \*



(c) In Accordance with subsections (a) and (b) of this section, those portions of aquifers described below are hereby exempted for the purpose of Class II injection activity. This exemption applies only to those portions of the Happy Hollow and Z-Sand aquifers defined on the surface by an outer boundary of those quarter sections tabulated below. The portions of the aquifers being exempted are located at a depth below land surface between 500 and 800 feet and the exemption is limited to injection of water of a quality equal to or better than that contained in the exempted aquifers.

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LOCATION

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T 25, R 6E - NW/4, SW/4 Section 2  
T 25, R 6E - Section 3  
T 25, R 6E - Section 4  
T 25, R 6E - NE/4, SW/4, SE/4, Section 5  
T 25, R 6E - SE/4, Section 6  
T 25, R 6E - Section 7  
T 25, R 6E - Section 8  
T 25, R 6E - Section 9  
T 25, R 6E - Section 10  
T 25, R 6E - NW/4 Section 15  
T 25, R 6E - Section 17  
T 26, R 6E - Section 1  
T 26, R 6E - NE, NW, Section 9

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LOCATION

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T 26, R 6E - NE/4, NW/4, SE/4, Section 10

T 26, R 6E - Section 11

T 26, R 6E - Section 12

T 26, R 6E - Section 13

T 26, R 6E - Section 14

T 26, R 6E - NE/4, SE/4 Section 15

T 26, R 6E - Section 22

T 26, R 6E - Section 23

T 26, R 6E - SW/4 Section 26

T 26, R 6E - Section 27

T 26, R 6E - NE 4, SE/4 Section 33

T 26, R 6E - Section 34

T 26, R 6E - NW/4, SW/4 Section 35

T 27, R 6E - Section 36